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Environmental Assessment

Seward to Girdwood
Iditarod National Historic Trail

Glacier and Seward Ranger Districts, Chugach National Forest
USDA Forest Service, Region 10, Alaska

For Information Contact: Jaime Schmidt
3301 C Street, Suite 300
Anchorage, AK 99503-3998
(907) 743-9500

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INTRODUCTION

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental consequences that would result from the proposed action and alternatives. Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Chugach National Forest Supervisor's Office in Anchorage, Alaska.

Background

The National Trails Act, as amended in 1978, designated the Iditarod National Historic Trail (INHT) from Seward to Nome, Alaska, across multiple federal, state, municipal and private lands.

NATIONAL HISTORIC TRAIL TERMINOLOGY

NATIONAL HISTORIC TRAIL: Congressionally designated route or trail system and associated heritage resources. National Historic Trails can be characterized as loosely defined corridors comprised of the following three components, which may or may not all be present and/or in the same location:

1. Congressionally designated route;
2. Route or sites where history actually occurred;
3. Associated trail or interpretive facilities managed for recreation use or enjoyment.

COMPREHENSIVE MANAGEMENT PLAN: Congressionally mandated report for each NHT identifying route locations; significant natural, historic and cultural resources; trail management objectives; anticipated cooperative agreements; uniform trail marking procedures; and identification of access needs to the trail and acquisition needs for significant sites or segments.

PRIMARY ROUTE: Route identified as the main travel way of a National Historic Trail.

CONNECTING OR CONNECTING TRAIL: Routes identified as parallel, alternate or adjoining travel ways to the Primary Route and part of a National Historic Trail.

The Bureau of Land Management, identified as the Trail Administrator for the INHT, led an extensive multi-agency/partner effort to develop the Iditarod National Historic Trail Seward to Nome Route Comprehensive Management Plan (Comprehensive Plan), published in 1986. The Comprehensive Plan provides guidelines for the protection, development and management of the Primary Route and Connecting Trails and for associated heritage resources along the entire length of the INHT.

The Comprehensive Plan also identified individual agency responsibilities for completing the subsequent planning and analysis necessary to determine the specific location, uses, development and management of the INHT Primary Route, connecting trails and associated heritage resources and sites on lands managed by each agency.

Since 1986, several trail segments have been planned, constructed or reconstructed along the Seward-Girdwood INHT route by various Federal, State, or other entities, primarily near or through the communities of Seward and Girdwood, based on the Comprehensive Plan recommendations. Several advisory councils, advocacy groups, and potential partners have assisted in conceptual planning and route location for segments of the Seward-Girdwood INHT. These include, but are not limited to, the Iditarod Trail Blazers, Girdwood Board of Supervisors, Trail Committees in Girdwood and Kenai Peninsula Borough, TRAAK Board, National Park Service and state agency employees.

In concert with the Chugach National Forest Revised Land and Resource Management Plan (Forest Plan), Forest Service employees and partners invested a considerable amount of time and expertise completing preliminary field inventories and feasibility assessments as a foundation for project planning and analysis. These efforts resulted in the identification and verification of route locations, heritage resources, associated recreation, and interpretative opportunities.

Purpose and Need for Action

The purpose and need for this initiative is to:

- Validate, refine, and implement selected Comprehensive Plan recommendations for a National Historic Trail within the Chugach National Forest boundary and connecting Seward to Girdwood at Crow Pass Trail.

- Identify existing and proposed INHT trail segments stemming from the Comprehensive Plan, crossing various land ownerships and connecting Seward with Girdwood.

- Facilitate a coordinated approach for completing route selection and obtaining permanent easements; identifying managed trail uses; preserving and interpreting heritage resources; constructing or reconstructing INHT trail, recreation and support facilities; and identifying and incorporating appropriate economic development opportunities.

- Develop and manage the INHT in concert with associated legislation, guidelines and plans identified for and by adjacent landowners and managers.

The Forest Plan provides the overall long-term management direction, and is the decision document for integrated, long-term resource planning for the Forest. The Forest Plan provides direction to achieve the desired future condition of the area by establishing goals, management direction, standards, and guidelines. This action responds to the goals and objectives (pp. 3-1 through 3-12); meets Forest-wide standards and guidelines (pp. 3-20 through 3-47); and helps move the project area towards desired conditions described in that plan (pp. 3-13 through 3-15). The proposed trail occurs within the following Management Areas: 210-Backcountry; 242-Brown Bear Core; 321-Scenic River; 312-Fish, Wildlife and Recreation; and 331-Recreational River. Development of the Seward-Girdwood INHT is consistent with direction for each of those Management Areas as outlined in the Forest Plan (pp. 4-7 through 4-90).

Proposed Action

The actions proposed by the Forest Service to meet the purpose and need are summarized below and described in more detail under Alternative 2:

- **Routes:** Identify, secure permanent easements, develop and manage a continuous INHT pathway, and associated trails, connecting Seward with Girdwood to Crow Pass Trail. Construct approximately 76 miles of new trail, of which 15 miles are over-snow trail with no tread, and reconstruct approximately 67 miles of existing trail.

- **Heritage Resources:** Identify, evaluate, and implement appropriate protection, preservation and management of selected heritage resources on lands administered by the Chugach National Forest.
- **Interpretive Materials:** Develop, install, and maintain interpretive and informational signing at 34 INHT access trailheads and at select heritage resource sites. Develop a project interpretation plan to ensure integrated themes and consistency in design and quality.
- **Associated Facilities:** Construct five new trailheads. Reconstruct three existing trailheads.

Decision Framework

Given the purpose and need, the deciding official will review the Proposed Action and the other alternatives in order to make the following decisions:

The decision to be made from this analysis is whether or not to develop and manage the Seward-Girdwood INHT trail routes, heritage sites, and associated facilities and if so:

- Which routes will be developed and managed to serve as the INHT? What will be the prescribed Trail Class and Managed Use for each trail segment?
- How will the heritage sites located on lands administered by the Forest Service and acquired rights-of-way associated with the project be managed? For any heritage sites that will be managed at Primary Management Level 1 (see definition, page 7), how will public use of the site be managed?
- What associated facilities, including trailheads and parking areas, will be developed and managed as part of this project? What will be the location, major components and capacities of these facilities?

Public Involvement

The proposal was first listed in the Chugach National Forest Schedule of Proposed Actions on April 1, 2001. The proposal was provided to the public and other agencies for comment during scoping from November 26, 2002 to December 27, 2002. In addition, as part of the public involvement process, the agency gave numerous presentations to various groups, agencies, and organizations in communities throughout the project area.

Using the comments from the public, other agencies, state and local governments, industry, the Chugach Alaska Corporation, and other organizations, the project interdisciplinary team developed a list of issues to address.

Issues

Issues for this project were identified through public and internal scoping. Two interrelated issues were determined to be substantive and within the scope of the project decision. These issues were addressed through the Proposed Action and alternatives, and are described below.

Issue 1: Meet Requirements of Alaska National Interest Lands Conservation Act (ANILCA) Section 1110(a) and Allowing Snowmachines for Traditional Activities

Under provisions of ANILCA, routes designated as the Iditarod National Historic Trail, become a "Conservation System Unit" (CSU). As a CSU, Section 1110 applies. The Seward-Girdwood INHT trail routes shall permit snowmachines for traditional activities during periods of adequate snow cover. Implementation of this section is fully described in Forest Service Manual R-10 Supplement 2326. Since the proposed trail crosses areas with nonmotorized prescriptions in the Forest Plan, there is an inherent conflict between ANILCA Section 1110 and the Forest Plan. There are two ways to resolve this conflict: 1) amend the Forest Plan to add a trail corridor, which is open for snowmachine use; or 2) maintain the snowmachine closures, which would require hearings per ANILCA Section 1110.

Issue 2: Motorized/Nonmotorized Recreation

There would be the potential for user conflicts between motorized and nonmotorized recreation including the displacement, disruption, and/or negative effects on user experiences, as well as potential safety issues. Concerns were expressed that the proposal did not provide an equitable distribution between motorized and nonmotorized recreation trail use. The majority of concerns raised pertained to winter motorized/nonmotorized uses.

Other Issues and Opportunities

Other questions, opinions, opportunities or concerns identified by the public during the scoping process are discussed below. These items did not lead to the formulation of individual alternatives, but if within the scope of this project, were incorporated into one or more alternatives and addressed when describing the effects of various alternatives. These other issues and opportunities include:

- **Access from Moose Pass:** The development and promotion of the INHT could result in an increased demand for access to the INHT from Moose Pass. The Proposed Action did not consider the provisions of additional access from Moose Pass to the INHT.
- **Trail Bridges:** Some of the proposed bridges cross unstable channels, which could lead to high maintenance costs. Proposed bridges across Granite Creek are of particular concern.
- **Other Opportunities:** The Proposed Action did not include other opportunities that meet the purpose and need. Opportunities include cabins, additional routes, spur trails to other recreational opportunities, and additional bridges.
- **Snow Trail Grooming:** The Proposed Action would not accommodate large grooming equipment on INHT snow trail segments and bridges for the length of the trail.
- **Portage Lake:** The Proposed Action would open a route across Portage Lake to canoeists and kayakers, which was part of the original historic route connecting to Whittier. This may alter the view of Portage Lake from the Begich-Boggs Visitor Center.

- **Highway/Rail/Trail Connectivity:** Trails developed through gold rush exploration were later used for improved transportation corridors. Today the Alaska Railroad and Seward Highway occupy major portions of the original INHT trails. The proposed action provides an interdependent connectivity of trail and highway segments to make a contiguous trail from Seward to Anchorage. The proposed action also provides opportunities for the Alaska Railroad to pursue ideas for an "Iditarod Rail-Trail Pass Program."

In addition, each comment has been reviewed and analyzed by the interdisciplinary team. The dispositions of all comments are documented in the project file.

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This section describes and compares the alternatives considered for the Seward-Girdwood INHT project. It includes a description and maps of each alternative considered. This section also presents the alternatives in comparative form, defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public.

Alternatives

Below are descriptions and maps of the alternatives considered for the Seward-Girdwood INHT project.

Alternative 1 "No Action"

Under the No Action Alternative, current management plans would continue to guide management of the project area. This alternative is not described in detail here, but is described as the existing condition in the sections below.

Alternative 2 "Proposed Action"

Alternative 2 is the Proposed Action as originally presented during public scoping with the addition of a few minor clarifications.[1] Under Alternative 2 a continuous INHT pathway and associated trails would be developed and managed, connecting Seward with Girdwood to Crow Pass Trail. Actively managed and allowed uses on these routes provide for a mix of motorized and nonmotorized opportunities according to Forest Plan direction. Hearings will be held as per ANILCA Section 1110 for segments of the trail closed to motorized uses before any closure will take effect.

Routes: Identify, secure permanent easements, develop and manage a continuous INHT pathway, and access trails from trailheads, connecting Seward with Girdwood to Crow Pass Trail:

- Approximately 156 miles of trail would be managed as part of the INHT.
- Trail Use: Refer to Tables 2 and 3 for definitions and specific mileages of Managed Use (actively managed use), allowed use and prohibited use. Trail uses are summarized below for this alternative.
    - The majority of the INHT "summer" trail route would be designed and actively managed for nonmotorized use by hikers and bicycle use (60 miles hike, 37 miles hike and bike). An additional 35 miles would also be managed

[1] Clarifications include: 1) All snow trails are Trail Class 2 except for the west side of Turnagain Pass, which would be Trail Class 3; 2) the proposed action starts just beyond the Nash Rd. trail but does not include it; 3) Trailheads at Mile 18 and Crow Creek Rd. would be managed for summer use only; 4) Johnson Pass trail should be Trail Class 3; 5) the stream crossing at Center Creek would be a bridge rather than a ford; 6) segment from Goldenfin Trailhead to Primrose Rd should be prohibited to motorized use, not just summer motorized use; 7) clarify that snowmachines would likely travel over lakes rather than the trail; 8) more accurate mileages; and 9) clarification on new or reconstructed Trailheads.

for horse use. Motorized use would be limited to the 6-mile segment between Nash Road and Bear Lake that would be managed for ATV use, as well as hiker, mountain bike, and equestrian use. Approximately 3 miles of water trail over Portage Lake would be open to canoe, kayak, or similar nonmotorized watercraft. Access points to Portage Lake would be at Bear Valley and Portage Pass and all boat use would be limited to along the north and east lakeshores. This would modify an existing closure on Portage Lake to allow this type of use.

- Winter snowmachine use would be allowed on approximately 76 miles of INHT "winter" trail routes, but only 69 miles would be designed and actively managed for this use. In many places, snowmachine use would likely occur on frozen lakes and open slopes rather than on the trail. Approximately 93 miles of trail would be designed and actively managed for cross-country ski use, of which 47 miles would be closed to motorized use.
- Prohibited trail uses would include 128 miles of "summer" trail closed to motorized use, and 79 miles of "winter" trail closed to motorized use.
- Other trail uses, such as dogsledding, would be allowed on any INHT trail segment unless prohibited by official legal order, as stated above.

FOREST SERVICE TRAIL MANAGEMENT DEFINITIONS

TRAIL CLASS* The prescribed scale of trail development, representing the intended design and management standards of the trail.

Trail Class 1: Primitive/Undeveloped. Intermittent tread with native surface; obstacles common; minimal constructed features; typically Primitive Setting.

Trail Class 2: Simple/Minor Development. Narrow and rough tread with native materials; occasional obstacles; limited constructed features; typically Semi-Primitive setting.

Trail Class 3: Developed/Improved. Obvious and continuous tread, typically with native materials; infrequent obstacles; trail structures and bridges may be common; typically Semi-Primitive to Roaded Natural Setting.

Trail Class 4: Highly Developed. Wide and relatively smooth tread with native or imported materials, which may be hardened; few obstacles; grades typically < 12%; trail structures and bridges frequent and substantial; typically Roaded Natural to Rural Setting.

Trail Class 5: Fully Developed. Tread width generally accommodates two-directional travel, commonly hardened with asphalt or other imported material; no obstacles, grades typically < 8%; trail structures frequent or continuous; typically Rural to Urban setting.

MANAGED USE: The mode(s) of travel that are actively managed and appropriate, considering the design and management of the trail. Note: Managed Use is not the same as "allowed use", which represents a much wider set of uses.

PROHIBITED USE: Mode of travel prohibited by official legal order.

* Forest Service Trail Class Matrix available in project file.

- Trail Class ranges from Trail Class 2 to Trail Class 5 (see definitions, this page).
- This proposal includes approximately 67 miles of trail reconstruction, 76 miles of new trail construction, of which 15 miles are over-snow only with no tread, the construction of 35 major trail bridges (over 20 feet span), and at least 50 minor bridges and boardwalks.
- Existing public easements will be used or new ones established for approximately 50 miles of trail across State lands, 5 miles of trail across Municipality of Anchorage lands (managed by the Heritage Land Bank), 4 miles of trail across private lands, and 1 mile of trail across Kenai Borough lands. The remainder of the trail is on lands administered by the Chugach National Forest.

Heritage Resources: The Chugach National Forest plans to identify, evaluate, and implement appropriate protection, preservation, and management measures on the INHT and its associated historic properties on lands it

administers. Protection procedures found in the Programmatic Agreement between the Chugach National Forest, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer will be followed to preserve these assets.

Proposed activities for heritage resources include:

Level 1 (see definitions, this page**):** Level 1 sites on National Forest land include:

- **Bruhn Ray Mine:** Conduct archaeological testing of the original building locations at the campsite to determine eligibility of the site for the National Register of Historic Places, and nominate if warranted. Add interpretive signing of the original site and of buildings now owned by and located at the Hope Historical Museum.
- **Canyon Creek Wing Dam:** Construct a viewing landing, access paths and fencing to provide safe viewing of the dam remains. Add interpretive signing of the site and nomination to the National Register of Historic Places.
- **White's Roadhouse:** Cleanup any hazardous materials remaining at the site. Stabilize and restore 2 historic buildings for adaptive reuse as a winter warming shelter. Construct an access trail to the site. Add interpretive signing and nominate to the National Register of Historic Places.
- **Manitoba Cabin:** Stabilize and restore the historic cabin for adaptive reuse for public recreation and interpretive education programs. Add interpretive signing. Complete eligibility determination for nomination to the National Register of Historic Places and nominate if warranted.
- **Hope Guard Station:** Stabilize and restore historic structures at the site. Add interpretive signing and nominate to the National Register of Historic Places.
- **Gilpatrick's Mining Camp:** Stabilize and restore historic structures at the site. Add interpretive signing of the site and nominate to the National Register of Historic Places.
- **Lauritsen Cabin:** Complete an active management plan for adaptive reuse for public recreation and interpretive education programs. Add interpretive signing.
- **Primrose Mine:** Stabilize and restore the one remaining standing structure. Add interpretive signing of the site. Conduct archaeological testing of other building locations to aid in nomination to the National Register of Historic Places.

HISTORIC SITE MANAGEMENT CATEGORIES
INHT Comprehensive Plan

Level 1: Recommended for Priority Management. Sites that are on, or eligible for, the National Register of Historic Places. Activities include, but are not limited to: determinations of eligibility and nominations to the National Register of Historic Places; and active preservation in the form of interpretation, stabilization, restoration, and adaptive use where feasible and appropriate.

Level 2: Recommended for Secondary Management. Sites are potentially eligible for the National Register of Historic Places, and may be elevated to Level 1 upon completion of evaluations and current site inventories. Activities include, but are not limited to: determinations of eligibility and nominations to the National Register of Historic Places; and preservation in the form of interpretation, stabilization, restoration or reconstruction as funds and resources are available.

Level 3: Recommended for Minimum Management. Sites may not be eligible for the National Register of Historic Places, but may be elevated to Level 2 of 1 upon evaluation. Activities include, but are not limited to: determinations of eligibility for possible nominations to the National Register of Historic Places; interpretation, as funds and resources are available, and adequate protection.

Level 2 (see definitions, page 8**):** Level 2 sites on National Forest land include, but are not limited to: Anderson's Camp, Falls Creek Mine, Crown Point Mine, Michaelson

Mining Camp, Twentymile River Saw Mill, and Wibel Mining Camp. Proposed activities at Level 2 sites are described in the definition above.

Level 3 (see definitions, page 8)**:** Level 3 sites on National Forest land include, but are not limited to: Dahl Mining Community, Griset's Roadhouse, Hirshey's Camp, Johnson Springs Cabin, Lakeside Roadhouse, Old Mail Camp, Oyotu (Passage Canal), Saxton Camp (Wilson's Camp), Snoring Inn, and Trail River Campground Ruins. Proposed activities at Level 3 sites are described in the definition above.

Interpretive Materials: Develop and install interpretive and informational signing at 34 INHT access trailheads and at select heritage resource sites. Develop a project interpretation plan to ensure integrated themes and consistency in design and quality.

Associated Facilities: The following ancillary activities are also proposed in conjunction with this project:

- Construct five new trailheads:
  1. Bear Lake Road, approximately 5 vehicles, toilet, kiosk, and trash container
  2. Granite Creek Recreation Area, approximately 50 vehicles with trailers, toilet, kiosk, and trash container
  3. Twentymile Valley, MP 83 Seward Highway, 20 vehicles, toilet, kiosk, and trash container
  4. Girdwood, MP 90 Seward Highway, 20 vehicles, toilet, kiosk, and trash container
  5. MP 3.9 Crow Creek Road, up to 12 vehicles, no structures would be constructed at this site, and it would not be used in the winter due to avalanche hazards.
- Reconstruct three existing trailheads:
  1. Nash Road, approx. 20 vehicles, toilet, kiosk, and trash container
  2. Ingram Creek west side, approx. 20 vehicles, toilet, kiosk, and trash container
  3. Ingram Creek east side, approx. 20 vehicles, toilet, kiosk, and trash container.
- Trailheads would have same surface (pavement or gravel) as adjacent roadway. Kiosks would include interpretive, regulatory, and trail condition information as well as a registration station. Several signs or bulletin boards may be installed instead of one kiosk. The environmental effects of the construction and reconstruction of trailheads are analyzed in this document. The actual construction or reconstruction on some of the trailheads would likely be done by the State of Alaska.

A summary map of Alternative 2 is included in Appendix A. More specific section maps are available upon request and are also posted on the website: www.fs.fed.us/r10/chugach.

Alternative 3

This alternative was developed to allow for snowmachine use for traditional activities, consistent with ANILCA. Under this alternative a continuous INHT pathway and associated trails would be developed and managed, connecting Seward with Girdwood to Crow Pass Trail. All routes would be open to winter snowmachine use, where physically feasible. Exceptions include routes through Girdwood and Seward, which are not in federal ownership and would not be subject to provisions of ANILCA. One through-route would be

actively managed for snowmachines. This alternative would require a Forest Plan Amendment for trails that go through areas currently closed to winter motorized use in the Forest Plan. In addition, this alternative incorporates opportunities and concerns identified through scoping by proposing to construct four new cabins; add one additional spur trail; construct wider bridges at Turnagain Pass to accommodate large grooming equipment for snowmachine and ski trails; and maintain the existing forest closure prohibiting boat use on Portage Lake.

Routes: Identify, secure permanent easements, develop and manage a continuous INHT pathway, access trails from trailheads, and associated trails, connecting Seward with Girdwood to Crow Pass Trail:

- Approximately 136 miles of trail would be managed as part of the INHT.
- Trail Use: Refer to Tables 2 and 3 for definitions and specific mileages of Managed Use (actively managed use), allowed use and prohibited use. Trail uses are summarized below for this alternative.
    - The majority of the INHT "summer" trail route would be designed and actively managed for nonmotorized use by hikers and bicycle use (54 miles hike, 37 miles hike and bike). An additional 35 miles would also be managed for horse use. Motorized use would be limited to the 6-mile segment between Nash Road and Bear Lake that would be managed for ATV use, as well as hiker, mountain bike, and equestrian use. In this alternative, no route across Portage Lake would be managed as part of the INHT. Existing closure prohibiting boat use on the lake would be maintained.
    - Winter snowmachine use would be allowed on approximately 127 miles of INHT "winter" trail routes, but only 68 miles would be designed and actively managed for this use. In many places, snowmachine use would likely occur on frozen lakes and open slopes rather than on the trail. Approximately 73 miles of trail would be designed and actively managed for cross-country ski use, of which 9 miles would be closed to motorized use.
    - Prohibited trail uses would include 122 miles of "summer" trail closed to motorized use, and 9 miles of "winter" trail closed to motorized use.
    - Other trail uses, such as dogsledding, would be allowed on any INHT trail segment unless prohibited by official legal order.
- This alternative includes the reconstruction of the Grant Creek Trail to improve access to Grant Lake.
- Trail Class ranges from Trail Class 2 to Trail Class 5.
- This proposal includes approximately 67 miles of trail reconstruction, 54 miles of new trail construction, the construction of 23 major trail bridges (over 20 feet span), and at least 50 minor bridges and boardwalks. In this alternative, no trails would be constructed on the east side of Turnagain Pass.
- Existing public easements will be used or new ones established for approximately 47 miles of trail across State lands, 5 miles of trail across Municipality of Anchorage lands (managed by the Heritage Land Bank), 4 miles of trail across private lands, and

1 miles of trail across Kenai Borough lands. The remainder of the trail is on lands administered by the Chugach National Forest.

Heritage Resources: The Chugach National Forest plans to identify, evaluate, and implement appropriate protection, preservation, and management measures on the INHT and its associated historic properties on lands it administers. Protection procedures found in the Programmatic Agreement between the Chugach National Forest, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer will be followed to preserve these assets.

Proposed activities for heritage resources include:

Level 1: Level 1 sites on National Forest land include all sites proposed in Alternative 2 except the Bruhn Ray Mine site, which is a Level 2 site in this alternative. Proposed activities are described below:

- **Canyon Creek Wing Dam:** Construct a viewing landing, access paths and fencing to provide safe viewing of the dam remains. Add interpretive signing of the site and nominate to the National Register of Historic Places.
- **White's Roadhouse:** Cleanup and stabilize the historic buildings. Dismantle any non-historic structures. Investigate the possibility of using historic structures for public use. If determined feasible, develop a prospectus to permit use under the Granger-Thye Act.
- **Manitoba Cabin:** Document, dismantle and reconstruct the historic cabin to as close to historical at a site to be determined. Nominate to the National Register of Historic Places.
- **Hope Guard Station:** Stabilize and restore historic structures as an administrative site (Office and Garage). Construct a historic type bunkhouse/living quarter near site for Forest Service contact point and crews working in the Hope area.
- **Gilpatrick's Mining Camp:** Cleanup, stabilize and restore historic structures at the site. Add interpretive signing of the site and nominate to the National Register of Historic Places.
- **Lauritsen Cabin:** This cabin has been stabilized and is on the National Register of Historic Places. Develop a management plan, which includes adaptive reuse, for this cabin and relocate it to a site to be determined.
- **Primrose Mine:** Stabilize and restore the cabin, secure to deter inside access and interpret. Nominate site to the National Register of Historic Places.

Level 2: Proposed activities for Level 2 sites are the same as in Alternative 2 with the addition of the Bruhn Ray Mine as a Level 2 site. See description under Alternative 2.

Level 3: Proposed activities for Level 3 sites are the same as in Alternative 2. See description under Alternative 2.

Interpretive Materials: Develop and install interpretive and informational signing at 33 INHT access trailheads and at select heritage resource sites. Develop a project interpretation plan to ensure integrated themes and consistency in design and quality.

Associated Facilities: The following ancillary activities are also proposed in conjunction with this project:

- Trailhead construction and reconstruction would be the same as in Alternative 2 except that no trailhead would be reconstructed on the east side of Ingram Creek. See description under Alternative 2.
- Construct four new cabins. Locations include: two along Johnson Pass trail; one on flatlands in Twentymile; and a shelter at Berry Pass. Cabin construction would consider historic design theme.

A summary map of Alternative 3 is included in Appendix A. More specific section maps are available upon request and are also posted on the website: www.fs.fed.us/r10/chugach.

Alternative 4

This alternative was developed allow for snowmachine use for traditional activities consistent with ANILCA, while also addressing concerns related to motorized and nonmotorized trail use. Under this alternative a continuous INHT pathway and associated trails would be developed and managed, connecting Seward with Girdwood to Crow Pass Trail. One through-route would be open to use by snowmachines. Motorized use on remaining areas would follow existing Forest Plan direction. Hearings will be held as per ANILCA Section 1110 for segments of the trail closed to motorized uses before any closure will take effect. In addition, this alternative incorporates opportunities identified through scoping by proposing to construct 6 new cabins; use fords over Granite Creek in lieu of bridges; construct a footbridge at Moose Pass to provide access to the INHT; and add 6 additional routes. Four of the 6 additional routes are included to provide an alternate but comparable winter motorized route around areas closed to motorized use.

Routes: Identify, secure permanent easements, develop and manage a continuous INHT pathway, access trails from trailheads, and associated trails, connecting Seward with Girdwood to Crow Pass Trail:

- Approximately 186 miles of trail would be managed as part of the INHT.
- Trail Use: Refer to Tables 2 and 3 for definitions and specific mileages of Managed Use (actively managed use), allowed use and prohibited use. Trail uses are summarized below for this alternative.
    - The majority of the INHT "summer" trail route would be designed and actively managed for nonmotorized use by hikers and bicycle use (63 miles hike, 37 miles hike and bike). An additional 35 miles would also be managed for horse use. Motorized use would be limited to the 6-mile segment between Nash Road and Bear Lake that would be managed for ATV use, as well as hiker, mountain bike, and equestrian use. Approximately 3 miles of water trail over Portage Lake would be open to canoe, kayak, or similar nonmotorized watercraft. Access points to Portage Lake would be at Bear Valley and Portage Pass and all boat use would be limited to along the north and east lakeshores. This would modify an existing closure on Portage Lake to allow this type of use.

  - Winter snowmachine use would be allowed on approximately 105 miles of INHT "winter" trail routes, but only 96 miles would be designed and actively managed for this use. In many places, snowmachine use would likely occur on frozen lakes and open slopes rather than on the trail. Approximately 103 miles of trail would be designed and actively managed for cross-country ski use, of which 49 miles would be closed to motorized use.
  - Prohibited trail uses would include 131 miles of "summer" trail closed to motorized use, and 81 miles of "winter" trail closed to motorized use.
  - Other trail uses, such as dogsledding, would be allowed on any INHT trail segment unless prohibited by official legal order.
- Additional spur trails in this alternative include the reconstruction of the Grant Creek Trail to provide access to Grant Lake, and an access trail halfway between Turnagain Arm and Turnagain Pass from the Seward Highway to both the low and high routes.
- Trail Class ranges from Trail Class 2 to Trail Class 5.
- This proposal includes approximately 82 miles of trail reconstruction, 77 miles of new trail construction, of which 15 are over-snow only with no tread, the construction of 32 major trail bridges (over 20 feet span), including a footbridge across Trail Lake at Moose Pass, and at least 50 minor bridges and boardwalks. Additional routes in this alternative include an alternate winter route using the existing Lost Lake and Primrose Trails and winter routes over Kenai Lake and Trail Lake. These additional routes have been added to provide a comparable route that is open to winter snowmachine use.
- Existing public easements will be used or new ones established for approximately 52 miles of trail across state lands, 5 miles of trail across Municipality of Anchorage lands (managed by the Heritage Land Bank), 4 miles of trail across private lands, and 1 miles of trail across Kenai Borough lands. The remainder of the trail is on lands administered by the Chugach National Forest.

Heritage Resources: Activities relative to heritage resources are the same as Alternative 3 (see description under Alternative 3).

Interpretive Materials: Develop and install interpretive and informational signing at 36 INHT access trailheads and at select heritage resource sites. Develop a project interpretation plan to ensure integrated themes and consistency in design and quality.

Associated Facilities: The following ancillary activities are also proposed in conjunction with this project:

- Trailhead construction and reconstruction would be the same as in Alternative 2. See description under Alternative 2.
- Construct six new cabins. Locations include: two along Johnson Pass trail; one along Lost Lake Trail; one on the east side of Turnagain Pass; one on flatlands in Twentymile; and a shelter at Berry Pass. Cabin construction would consider historic design theme.

A summary map of Alternative 4 is included in Appendix A. More specific section maps are available upon request and are also posted on the website: www.fs.fed.us/r10/chugach.

Alternatives Considered but Eliminated from Detailed Study

The IDT considered including a Ptarmigan Lake-Snow River route in an alternative as proposed by the Alaska Mountain and Wilderness Huts Association in support of their hut-to-hut proposal. However, this alternative was not considered in detail since the Ptarmigan Lake-Snow River route was not part of the historic trail and would be outside the scope of the INHT project. This proposal could be considered in a separate analysis.

In response to public comments, the IDT also considered an alternative that would provide a continuous nonmotorized route. The IDT carefully reviewed potential routes, but no options were possible that would be consistent with Forest Plan direction. Therefore, this alternative was not considered in detail. A number of other alternatives were also considered during the planning process, but were not studied in detail. Descriptions of these alternatives as well as the rationale for why they were not studied in detail are located in the project record.

Mitigation Measures Common to All Action Alternatives

The following items are listed as mitigation measures that were developed to address potential impacts associated with the action alternatives or as Forest Plan direction in the form of Forest-wide standards and guidelines.

Public Use During Construction Operations

- Notify the public of construction/reconstruction operations through the web, newspapers and trailhead bulletin boards.
- Limit use of motorized construction machinery on existing trails to non-holiday weekdays and between the hours of 7 am to 7 pm.
- During reconstruction, post signs and/or lookouts to guide users around working equipment.
- Construction camp locations need to be approved by the District Ranger (Forest Plan Standard: E. Locate camps at least ¼ mile from known recreation camping sites or human use areas; F. Locate camps so that they are not visible from major travel routes).

User Conflicts and Trail Etiquette

- Install gates or obliterate roads to prohibit vehicular access where existing roads lead to proposed trails.
- Sign, or provide information through other appropriate means, to indicate potential alternate routes.

Heritage Resources

- A heritage resource specialist will monitor all project activities when these occur within 100 feet of a known cultural site. If any previously undiscovered heritage artifacts and/or sites are encountered at any point in time prior to or during implementation of this project, protect the heritage artifacts and/or sites and avoid

any disturbance in the area containing the artifacts and/or sites (and similar sites in that vicinity). The project archeologist should be notified immediately to evaluate the discovery and recommend avoidance or mitigation measures.

Watershed and Fisheries

- **Floodplain Analysis and Evaluation (Best Management Practice (BMP) 12.4)**: outlines floodplain protection and requires modifying designs to "minimize impairment of natural functions and values of a floodplain, when off-floodplain alternatives are not practiceable" (USDA Forest Service, 1996).
- **Wetland Identification, Evaluation, and Protection (BMP 12.5):** identify wetland functions and values, and provide appropriate protection measures designed to avoid adverse hydrologic impacts.
- **Riparian Area Designation and Protection (BMP 12.6):** provides similar protection for riparian areas.
- **Road and Trail Erosion Control Plan (BMP 14.5):** requires a road and trail erosion control plan for road or trail projects to minimize or mitigate erosion, sedimentation, and resulting water quality degradation prior to the initiation of construction and maintenance activities. Ensure compliance through effective contract administration and timely implementation of erosion control measures. Recommended practices include:
    1. Reestablish vegetation on exposed soils
    2. Protect the soil surface from erosion during construction
    3. Use measures (silt fences, straw bales, etc.) to inhibit the transport of fine sediments
    4. Minimize soil disturbance
- **Bridge and Culvert Design and Installation** (**BMP 14.17):** requires that bridge and culvert design and installation minimize adverse impacts on water quality, streamcourses, and fisheries resources from the installation of bridges, culverts, or other stream crossings. Recommended practices include:
    1. Culverts on Class I & II streams shall be designed to allow fish passage during normal and low flows with no downstream scour
    2. Bridges on Class I, II, & III streams shall be designed to handle an appropriate (normally 50 year) flood.
    3. Instream use of equipment shall be kept at a minimum.
    4. Structures shall be designed to minimize stream bed and streambank erosion.
    5. Construction shall not obstruct the streamcourse.
- **Recreation Facilities Planning (BMP 16.1):** provides guidelines to protect soil and water resources through appropriate planning, design and location of recreational facilities.
- **Trail Construction and Maintenance** (**BMP 16.4)** provides guidelines for trail construction and maintenance to minimize soil erosion and water quality problems originating from trails and their drainage structures.

Wildlife: Mountain Goats

- Avoid locating permanent campsites or cabins, such as those proposed on Johnson Pass Trail or Turnagain Pass, within 1 mile of winter range or identified kidding habitat.

Wildlife: Brown Bears

- Buffer anadromous fish streams according to Forest Plan standards and guidelines.

Wildlife: Bald Eagles

- Ensure the trail is at least 330' away from the bald eagle nests on Lyon Creek and Twentymile, in accordance with the MOU between the Forest Service and USFWS, or request a variance.
- The Johnson Pass Trail nest is within 330' of the existing trail. Conduct any reconstruction activities that would cause noise disturbance beyond normal recreational activities, outside the breeding season (March 1-May 31), and outside June 1-August 31 if the nest is active.
- Do not conduct blasting activities within 0.5 mile of any known nests unless in accordance with the guidelines in the MOU.
- Maintain habitat suitable for perching or winter roosting (as identified by the wildlife biologist) as outlined in the MOU, especially near Kenai Lake and Trail Lakes.

Wildlife: Goshawk

- If nests are found, follow Forest Plan standards and guidelines regarding goshawks.

Vegetation

- As required by the Forest Plan, it will be necessary to incorporate the following exotic plant prevention and control:
  - Clean equipment prior to entering NFS lands to reduce introduction of weed seeds.
  - Where available, use weed-free materials (i.e., gravel, seeding mixtures).

Minerals

- Notify mining claimants of trail construction activities, especially if the trail accesses their claims or is adjacent to them. This can be coordinated through the District Minerals Specialist.
- To minimize potential user conflicts with mining claimants:
  - On trails that are closed to general public ATV use, only approve miner's use of ATVs when this use is reasonably incidental to the mining operation. Limit mining ATVs to avoid high public use times such as weekends or holidays.

Design and Implementation Features Common to All Action Alternatives

The following items are listed as design and implementation features that were developed to address potential impacts associated with the action alternatives. Design and implementation features may be applied to any of the action alternatives where feasible.

Trail and Facility Design

- A sign plan will be developed and implemented as part of trail construction. The plan will identify themes and graphic styles appropriate to the INHT and setting (i.e. wood or natural-appearing materials, small size). Signs and materials will include user safety, trail etiquette, interpretation of the routes, history, and surrounding natural resources.
- All trail structures (trailhead toilets, kiosks, benches, bridges, boardwalks and signs) will use similar materials, colors and forms to provide an identifiable "look" that is unique to the INHT, that conveys that it is a National Forest and National Historic Trail trail.
- Trail development will conform to National Trail Standards.

User Conflicts and Trail Etiquette

- Work with trail users to promote positive and tolerant trail etiquette.
- Patrol regularly, based on season of use and/or recurring conflicts, to provide education and enforcement.
- Incorporate shared use and trail etiquette signing at trailheads and access points as appropriate and/or needed.
- Where practical, locate winter non-motorized and motorized trails on separate alignments to minimize user conflicts.

Litter and Vandalism

- Include trailheads in law enforcement cooperative agreements with State patrol.
- Patrol regularly, based on season of use and/or recurring occurrences, to provide education (Leave No Trace) and enforcement.

Wildlife: Moose

- Place interpretive/educational signs to educate users about moose habitat and potential interactions at trailheads leading into important moose habitat. These include travel corridors (Turnagain Pass); rutting areas (Twentymile, Johnson Pass South, and Grayling, Bear Lake Road, and Lost Lake trailheads); calving areas (Twentymile and Trail of Blue Ice); and winter habitat (Lost Lake, Bear Lake Road, Johnson Pass North, and Twentymile trailheads, near White's Roadhouse, and at cabin location on Lost Lake Trail).

Wildlife: Brown Bears

- Where feasible, route the trail to avoid areas of high probability of brown bear use to minimize negative human-bear encounters. Where the trail goes through areas shown to have high and moderate use by bear, locate and design trails to provide visibility for humans and bears in order to reduce negative encounters.
- Place interpretive/educational/warning signs in high and moderate use bear habitat and near anadromous streams to educate and help prevent negative interactions between bears and humans. Ask for assistance in reporting sightings and interactions.
- Collaborate with Alaska Department of Fish and Game (ADFG) to ensure that bear baiting stations adhere to their regulations. This will limit luring bears to stations near trails.

Wildlife: Goshawk

- During trail construction, remove as few trees as possible in old growth stands to reduce impacts to old growth associated species such as Townsend's warblers, marbled murrelets, and northern goshawk.
- Conduct additional surveys to locate nests where goshawks were heard during surveys. If nests are found, follow Forest Plan standards and guidelines regarding goshawks.

Wildlife: Bald Eagles

- Maintain large cottonwoods wherever possible during trail construction to maintain potential nesting habitat.

Wildlife: Migratory Birds

- During trail construction, avoid removing vegetation containing nests or cavities, and snags.

Vegetation

- Minimize or avoid direct disturbance to the rare plant species *Potentilla drummondii* (Drummond's cinquefoil), in subalpine meadows in the vicinity of Turnagain Pass. *Potentilla drummondii* is a plant species of conservation concern (USDA Forest Service 2002). It is globally secure but extremely rare in Alaska.

Minerals

- Educate the public concerning mining claims and rights associated with them.
- To minimize abandoned mine hazards at known sites, gate or close known mine openings, or for those that remain open, post signs warning of hazards.

Comparison of Alternatives

This section provides a comparison of alternatives relative to the major issues and presents the alternatives in summary form.

Table 1. Comparison of Alternatives: Major Issues

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Total miles of trail managed as the INHT	31	156	136	186
Issue: Snowmachine Use for Traditional Activities, Consistent with ANILCA				
Meets requirements of ANILCA Section 1110(a)	Y	Y	Y	Y
ANILCA hearings required (miles)	0	70	0	72
Winter motorized through-route provided	No	No	Yes	Yes
Issue: Motorize/Nonmotorized Recreation				

Total miles of standard (terra) trail:				
- Motorized	Motorized: 6	Motorized: 6	Motorized: 6	Motorized: 6
- Nonmotorized	Nonmotorized: 81	Nonmotorized: 128	Nonmotorized: 122	Nonmotorized: 131
Total miles of winter (snow) trail:				
- Motorized	Motorized: 60	Motorized: 76	Motorized: 125	Motorized: 105
- Nonmotorized	Nonmotorized: 32	Nonmotorized: 79	Nonmotorized: 9	Nonmotorized: 81

Table 2. Comparison of Alternatives: Inventory and Costs

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Total miles of trail	**91**[1]	**156**	**136**	**186**
"Summer Trail": (total miles available for use)	86	134	128	137
Terra Trail	86	131	126	134
Water Trail	0	3	0	3
"Winter" Trail: (total miles available for use)	91	156	133	186
Snow Trail (total miles available)[2]	91	151	131	169
Frozen Lake Trail (total miles available)	0	5	2	17
Actively Managed Winter Trails (actively managed miles)[3]	79	116	96	145
Existing, Reconstructed, and New Trail				
"Summer" Trail				
Existing Standard/Terra Trail (no reconstruction)	86	5	5	5
Reconstructed Standard/Terra Trail	0	67	67	67
New Standard/Terra Trail	0	61	54	62
Water Trail	0	3	0	3
"Winter" Trail				
Existing Snow Trail	79	10	10	10
Reconstructed Snow Trail	0	55	55	70
New Snow Trail	0	50	30	51
New Frozen Lake Trail	0	2	2	17
Associated Trail Facilities[4]				
Total Trailheads (existing and new)	30	34	33	36
Existing Trailheads (no reconstruction proposed)	30	22	22	24
Existing Trailheads (to be reconstructed)	0	3	2	3
New Trailheads	0	5	5	5
New Cabins	0	0	4	6
Cost: Construction and Maintenance (in thousands of dollars)				
Total Construction[5]	$0	$9,241	$8,477	$10,632
Total Annual Maintenance[5]	$320	$488	$452	$571

[1] Total miles in Alt. 1 reflects miles of all existing trails, not just those currently managed as the INHT.
[2] **Snow Trails:** Winter use allowed on trails with adequate snow cover.
[3] **Manage Use:** The mode(s) of travel that are actively managed and appropriate, considering the design and management of the trail. Note: Managed Use is not the same as "allowed use", which represents a much wider set of uses.
[4] **Trailheads:** Total trailheads show all access points with parking along the INHT. Some of these will be constructed or recontstructed as part of other Forest Service or State projects, with separate NEPA analysis. Only two new and one reconstructed trailheads are proposed in this EA. Maintenance cost reflects all trailheads, not just those covered in this EA.
[5] **Cost:** Cost figures do not reflect costs associated with heritage sites and interpretation.

Table 3. Comparison of Alternatives: Managed Trail Use

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Managed use (see definition above) Note: Several Managed Uses "overlap," and therefore Managed Use miles are not additive				
"Summer" Trail				
Hike	86	132	126	135
Mountain Bike	62	72	72	72
Equestrian	35	35	35	35
ATV	6	6	6	6
Canoe, Kayak	0	3	0	3
"Winter" Trail				
Ski	64	93	74	103
Snowmachine	57	69	68	95
Concurrent Managed Use These trail segments actively managed for multiple Managed Uses. Other uses allowed, unless prohibited. Mileages are additive.				
"Summer" Trail: total miles	**86**	**134**	**128**	**137**
Hike (single Managed Use, other motorized uses allowd)	24	60	54	63
Hike, Mountain Bike	27	37	37	37
Hike, Mountain Bike, Equestrian	29	29	29	29
Hike, Mountain Bike, ATV	6	6	6	6
Canoe, Kayak	0	3	0	3
"Winter" Trail: total miles	**79**	**116**	**96**	**145**
Ski (single Managed Use, no motorized use)	22	47	9	49
Ski (single Managed Use, may have motorized use)	0	0	19	0
Snowmachine (single Managed Use)	15	23	23	42
Ski, Snowmachine	43	46	45	54

ENVIRONMENTAL CONSEQUENCES

This section provides a summary of the environmental impacts of each alternative. It discusses the effects relative to the two key issues as well as the applicable physical, biological, and social environments within the project area. To address cumulative effects, a list of reasonably foreseeable future actions has been developed and is included in the project record. The discussions of resources and potential effects incorporate existing information included in the Revised Forest Plan Final Environmental Impact Statement, project-specific resource reports and related information, and other sources as indicated. The planning record for this analysis contains these sources of information as well as results of field investigations and public involvement efforts. The planning record is located at the Chugach National Forest Supervisor's Office in Anchorage, Alaska, and is available for review during regular business hours. Information from the record is available upon request.

Key Issues

Issue 1: Snowmachine Use for Traditional Activities, Consistent with ANILCA Section 1110(a)

The Seward to Girdwood INHT would become a "Conservation System Unit" (CSU) and therefore would be subject to the provisions of ANILCA Section 1110(a). To comply with ANILCA Section 1110(a), INHT trail routes on federal lands within the National Forest boundary shall be open to snowmachine use for traditional activities during periods of adequate snow cover. Snowmachine use may be regulated to protect resource values.

Effects

Alternative 1

Under this alternative, the existing 21 miles of the INHT route (Johnson Pass Trail) would continue to be managed consistent with the ANILCA Section 1110(a) allowing snowmachine use for traditional activities. The 9 miles of existing INHT in Girdwood are on Municipal lands and are outside the National Forest boundary, so are not subject to provisions of ANILCA. No other trails would be managed as part of the INHT and would not become CSUs; therefore, the provisions of ANILCA Section 1110(a) would not apply.

Alternative 2

In this alternative, 76 miles would be open to winter snowmachine use and 79 miles of trail would be closed to winter motorized use. Hearings as per ANILCA Section 1110(a) would be held on 70 miles of trail that would be closed to snowmachine use. This alternative would not provide a continuous route open to snowmachines. All routes would follow Forest Plan direction relative to winter motorized and nonmotorized use and a Forest Plan Amendment would not be required.

Alternative 3

In this alternative, all routes would be open to snowmachines with the exception of those on private land in Seward and Girdwood. No ANILCA Section 1110(a) hearing would be

required because the segments in Seward and Girdwood are outside Forest Service ownership and the provisions of ANILCA would not apply. This alternative would provide a continuous route open to snowmachines. However, not all segments would be managed or recommended for snowmachine use. Specific areas where winter motorized use is not recommended include: the Twentymile-Winner Creek loop; and a 6-mile stretch along the Seward Highway, between Snow River and Ptarmigan Creek. In the Twentymile area, avalanche hazards occur along the proposed trail and winter use would not be recommended. Regular avalanche control work by the Alaska Department of Transportation occurs along the 6-mile stretch above the Seward Highway, between Snow River and Ptarmigan Creek, and winter use would not be recommended on this segment. Since all routes on National Forest System land would be open to snowmachine use, Forest Plan Amendments would be required on trails that go through areas currently closed to winter motorized use in the Forest Plan.

Alternative 4

In this alternative, 105 miles would be open to winter motorized use and 81 miles of trail would be closed to winter motorized use. ANILCA Section 1110(a) hearings would be held on 72 miles of trail that would be closed to snowmachine use. This alternative would provide a continuous route open to snowmachines. In some places this means providing an alternate but comparable snowmachine route around areas that are closed to winter motorized use. These alternate routes include: Lost Lake and Primrose Trails; and travel over Kenai and Trail Lakes when ice conditions permit. All routes would follow Forest Plan direction relative to winter motorized and nonmotorized use and a Forest Plan Amendment would not be required.

Issue 2: Motorized/Non-Motorized Recreation

There are potential user conflicts between motorized and nonmotorized recreation including the displacement, disruption, and/or negative effects on user experiences, as well as potential safety issues. Concerns were expressed that the proposal would not provide an equitable distribution between motorized and nonmotorized recreation trail use. The majority of concerns raised pertained to winter motorized/nonmotorized uses.

User conflicts occur when there is competition or perceived incompatibility of use by different types of users. Types of conflicts between winter users for all trail segments are focused on the different values held by motorized users and nonmotorized users, including noise, ease of access, snow compaction, speed of travel and potential safety concerns. The miles of trail shared by motorized and nonmotorized users and miles of trail designed and actively managed for specific uses are used in this analysis.

Conflicts between nonmotorized users, such as hikers or stock being startled by bikers, may occur. These conflicts are addressed in the general recreation effects and also in more detail in the project record.

Effects

Table 4: Summary of Winter Trails				
Winter Trail (total miles available for use)*	Alt. 1 (miles)	Alt. 2 (miles)	Alt. 3 (miles)	Alt. 4 (miles)
Nonmotorized Only (motorized use prohibited)	32	79	9	81
Mixed Motorized/Nonmotorized	60	76	127	105
Winter Trail Managed Use				
Ski (single managed use, no motorized use)	22	47	9	49
Ski (single Managed Use, May have motorized use)	0	0	19	0
Snowmachine (single Managed Use)	15	23	23	42
Ski and Snowmachine	43	46	45	54
*Note: There are more miles of trail *available* for winter use than are *actively managed* for winter use.				

Alternative 1

Existing patterns of use would remain the same with changes occurring due to societal changes or interest rather than through development. Access would be limited to existing Forest Service, State, community, or user-developed trails. No developments would help separate motorized users from nonmotorized users. Existing levels of user conflicts would continue or potentially increase if use increases.

Alternative 2

In this alternative, actively managed and allowed uses on the trail would provide for a mix of motorized and nonmotorized opportunities according to Forest Plan direction. See Table 4 and the items below for a summary of these uses.

- Approximately 76 miles of winter trail would be open to motorized use. Of the 76 miles, 23 miles would be designed and actively managed for snowmachines only. Potential user conflicts on these 23 miles would likely be minimal.
- Approximately 79 miles would be closed to motorized use.
- Approximately 93 miles would be actively managed for skiers. Of the 93 miles, 47 miles would not allow motorized use. Potential user conflicts on these 47 miles would likely be minimal.
- Approximately 46 miles would be designed and actively managed for both skiers and snowmachiners and have the most potential for user conflicts to occur.

To help minimize some of the potential conflicts, the following actions are proposed in this alternative. Approximately 25 miles of trail would be developed to separate winter motorized users from nonmotorized users. These areas include Turnagain Pass and at the proposed Granite Creek Recreation Area (MP 62, Seward Highway) to Johnson Pass Trail. Where trails are managed for multiple uses, minimum tread width would be 3 feet, to allow people traveling at different speeds and direction to pass. Development and promotion of the INHT, however, is expected to increase use of this and all area trails, potentially

increasing user conflicts. Extensive open space is available for both user groups as specified in the Forest Plan.

Alternative 3

In this alternative, all trails would be open to winter snowmachine use, where physically feasible. See Table 4 and the items below for a summary of these uses.

- Approximately 127 miles of winter trail would be open to motorized use. Of the 127 miles, 23 miles would be designed and actively managed for snowmachines only. Potential user conflicts on these 23 miles would likely be minimal.
- Approximately 9 miles would be closed to motorized use. These miles would not require ANILCA Section 1110(a) hearings as they are not on federal lands or easements.
- Approximately 73 miles would be actively managed for skiers. Of the 73 miles, 9 miles would not allow motorized use. Potential user conflicts on these 9 miles would likely be minimal.
- Approximately 19 miles would be actively managed for skiers only, but would also allow motorized use. The remaining 45 miles would be designed and actively managed for both skiers and snowmachiners. These 65 miles (19 + 46) would have the most potential for user conflicts to occur.

To help minimize some of the potential conflicts, the following actions are proposed in this alternative. Approximately 5 miles of trail would be developed from the proposed Granite Creek Recreation Area to Johnson Pass Trail to separate winter motorized users from nonmotorized users. Where trails are managed for multiple uses, minimum tread width would be 3 feet, to allow people traveling at different speeds and direction to pass. Development and promotion of the INHT, however, is expected to increase use of this and all area trails, potentially increasing user conflicts. Extensive open space is available for both user groups as specified in the Forest Plan.

Alternative 4

In this alternative, actively managed and allowed uses on the trail would provide for a mix of motorized and nonmotorized opportunities according to Forest Plan direction. Four segments were added to provide an alternate but comparable winter motorized route around areas closed to motorized use. See Table 4 and the items below for a summary of these uses.

- Approximately 105 miles of winter trail would be open to motorized use. Of the 105 miles, 42 miles would be designed and actively managed for snowmachines only. Potential user conflicts on these 42 miles would likely be minimal.
- Approximately 81 miles would be closed to motorized use.
- Approximately 103 miles would be actively managed for skiers. Of the 103 miles, 49 miles would not allow motorized use. Potential user conflicts on these 49 miles would likely be minimal.
- Approximately 54 miles would be designed and actively managed for both skiers and snowmachiners and have the most potential for user conflicts to occur.

To help minimize some of the potential conflicts, the following actions are proposed in this alternative. Approximately 52 miles of trail would be developed or managed to separate winter motorized users from nonmotorized users. These trails include the Lost Lake/Primrose trails; routes across Kenai and Trail Lakes; the connection from Granite Creek Recreation Area to Johnson Pass trail; and the Turnagain Pass area. Where trails are managed for multiple uses, minimum tread width would be 3 feet, to allow people traveling at different speeds and direction to pass. User conflicts between skiers and snowmachiners is less likely to occur than in Alternative 2 because snowmachiners would be encouraged to use the over-lake routes and the Lost Lake/Primrose trails where there are parallel ski trails on the uplands. Development and promotion of the INHT, however, is expected to increase use of this and all area trails, potentially increasing user conflicts. Extensive open space is available for both user groups as specified in the Forest Plan.

Environmental Consequences by Resource Area

Recreation

Existing Condition

Trails: This proposal includes approximately 93 miles of trails that already exist. Some of these existing trails are in fair to good condition; however, many of these trails are in poor condition with tread and drainage problems.

Recreation: There are a number of developed and undeveloped recreation sites and facilities in the project area. The developed recreation sites include community parks and trails, a downhill ski resort, and a gold-panning area, as well as many Forest Service campgrounds, trailheads, established and maintained trails, boat access sites, overlooks off the Seward Highway, and the Begich-Boggs Visitor Center (BBVC). Dispersed recreation sites include spur roads, highway pullover areas, non-maintained trails, and dispersed camping areas.

The project area provides many recreational opportunities. Winter activities include but are not limited to skiing, snowboarding, snowmachining, snowshoeing, and to a lesser extent ice-skating, ice climbing, ice fishing, and dogsledding. Popular areas for winter recreation are Turnagain Pass, Twentymile and Placer valleys, Lost and Goldenfin Lakes and the South Fork of Snow River.

During the summer and fall, recreational activities include but are not limited to hiking, camping, fishing, boating, horse-back riding, biking, hunting, rock climbing and sight-seeing. The BBVC in Portage Valley receives close to 400,000 visitors annually, 90% of which are during the summer.

Special Uses: Within the project area, close to 50 companies and organizations hold permits for a variety of activities such as guided fishing, hiking, biking, horseback riding, snowmachining, boating, dogsledding, skiing, and educational programs.

Scenery: The proposed trail location generally falls on lands with high scenic value. The scenery includes many and varied water features such as braided gravel streams, cascading waterfalls, and lakes ranging in size and character from small marshy ponds to Kenai Lake. The vegetation changes with altitude and exposure, ranging from sea-level rainforests of

spruce and hemlock, to drier spruce-birch forests, and subalpine open stands of hemlock, alders and salmonberries. Muskeg openings are found at all elevations and help provide long-distance views to surrounding mountains. Rock outcrops add close-up interest along with opportunities to see wildlife and native plants in their natural habitats.

Effects

Alternative 1 (No Action)

Existing patterns of use would remain the same with changes occurring due to societal changes or interest rather than through development. There would be no continuous INHT for long-distance travel or events. Access would be limited to existing Forest Service, State, community, or user-developed trails.

The existing 93 miles of trails and 19 major bridges included in the action alternatives would remain and continue to be used. Lacking the reconstruction proposed in the action alternatives, continued degradation of these trails would eventually lead to impacts equal to or exceeding impacts due to reconstruction activities. Although maintenance would continue, annual funding is generally not adequate to meet standards. As trails continue to degrade, high Capital Investment Project (CIP) funds would be required to bring them back to standard. Currently, CIPs have been submitted for funding to bring the following trails up to standard: Lost Lake/Primrose; Ptarmigan Creek; Johnson Pass; and Winner Creek.

Trails in Girdwood would continue to be developed using non-federal funds, following the trail route study adopted in 1997. Completing the trail as envisioned in this route study would take considerably longer under this alternative.

More details on specific sections of the proposed routes are located in the project record.

Effects Common to All Action Alternatives

Recreation and Interpretive/Education Opportunities: Overall, implementing Alternative 2, 3, or 4 would result in positive direct and indirect effects to recreation by adding outstanding trail recreation opportunities for people. On-site interpretation of historic features and events related to the Iditarod Trail would provide opportunities for people to experience a significant historic period in Alaska.

Under any action alternative, there would be a continuous trail connecting Seward with Girdwood to Crow Pass Trail, providing trail access to beautiful long-distance views of the Chugach Mountains, cascading waterfalls, and a wide range of ecosystems, as well as opportunities for long distance travel or events. Only a short section of the trail would occur along the Seward Highway and the majority of the trail would be located away from the highway.

The current small amount of summer backcountry users seeking solitude, or who do not wish to engage in historic interpretation, would be displaced from the area within several miles of the trail as this area becomes more highly used by people accessing it from a developed trail. This new use would decrease as distance from trail increases.

Other User Conflicts: Conflicts between bikers and hikers could occur on most of the summer-use trails since they are expected to have fairly high use by both bikers and hikers. Additional conflicts could develop if equestrian use increases. Conflicts between placer

miners and trail users could develop along Ingram Creek in Alternatives 2 and 4. Winter user conflicts have already been discussed above and will not be addressed in this section.

Scenery: For all alternatives, the proposed routes of the trail are consistent with the scenic integrity objectives in the Forest Plan. To minimize effects to the area's scenery and to maximize scenic views from the trail, a landscape architect should review all trail and facility designs and conduct periodic construction reviews.

Vandalism and Litter: Five new and three (two in Alternative 3) reconstructed trailheads could potentially increase litter and vandalism. Regular Patrols and maintenance, as well as good site design to minimize places not readily visible, would help reduce these impacts.

Special Uses: None of the action alternatives would result in effects to special use permits.

Recreation effects specific to each alternative are discussed below and more detailed information is located in the project record.

Alternative 2

In this alternative, 156 miles of trail would be managed as part of the INHT system. Specific activities would be to reconstruct 67 miles of existing trail; construct 76 miles of new trail, of which 15 miles are over-snow trail with no tread; construct 35 new major bridges; construct five new trailheads; and reconstruct three trailheads.

People could access Whittier without paying to drive their vehicles through the tunnel by using canoes, kayaks, or similar nonmotorized watercraft to cross Portage Lake from Bear Valley to Portage Pass Trail. These users would be visible from the BBVC and parking areas and would be an added visual element to the setting. A Forest Plan amendment would be needed to allow this use across Portage Lake.

People who drive vehicles on the primitive road sections between Bertha Creek Campground and Spokane Creeks could potentially use the bridges installed for the winter trail. The bridges would need to be able to accommodate their use or be barricaded to prevent vehicular use.

Hunters establishing bear bait stations near Turnagain arm would be displaced from current station sites, since sites need to be at least ¼ mile from any trail locations.

Physical impacts would include 25 acres of ground disturbance relative to tread and 69 acres in cleared vegetation.

Alternative 3

In this alternative, 136 miles of trail would be managed as part of the INHT system. Compared to the other action alternatives, this alternative has the fewest miles of trail managed as part of the INHT. Specific activities would be to reconstruct 67 miles of existing trail; construct 54 miles of new trail; construct 23 new major bridges; construct five new trailheads; reconstruct two trailheads; and construct four recreational cabins.

The four recreational cabins in this alternative may become destination points, potentially increasing attraction and use along those segments (Johnson Pass and Twentymile area). Increased user intensity in these areas may also increase the potential for user conflicts.

This alternative includes the reconstruction of the Grant Creek Trail. The improvements to Grant Creek Trail would make access to Grant Lake easier, potentially increasing use of this lake, and displacing current users.

In this alternative, the 15-mile segment on the west side of Turnagain Pass would be constructed as a year-round trail. In the other action alternatives, this segment would only be a winter over-snow trail with no tread. No trails would be constructed on the east side of Turnagain Pass. Adding summer recreational use on the west side of the pass where very little currently exists would be a change to the view of the Pass area from the Seward Highway.

The unimproved road sections between Bertha Creek Campground and Pete Creek would become a trail, closed to motorized use, displacing current users of these short road sections.

No access to Whittier, except for driving the highway, would be provided. The highway includes a 2.5-mile long tunnel that is closed to pedestrian use.

Snowmachiners could begin to use Girdwood as a starting point for using the National Forest portions of INHT resulting in added noise in the valley, and possible illegal use in areas that would remain closed to their use.

Physical impacts would include 22 acres of ground disturbance relative to tread and 48 acres in cleared vegetation.

Alternative 4

In this alternative, 186 miles of trail would be managed as part of the INHT system. Compared to the other action alternatives, this alternative has the greatest miles of trail managed as part of the INHT. Specific activities would be to reconstruct 82 miles of existing trail; construct 77 miles of new trail, of which 15 miles are over-snow trail with no tread; construct 32 new major bridges; construct five new trailheads; reconstruct three trailheads; and construct six recreational cabins.

People could access Whittier without paying to drive their vehicles through the tunnel by using canoes, kayaks, or similar nonmotorized watercraft to cross Portage Lake from Bear Valley to Portage Pass Trail. These users would be visible from the BBVC and parking areas and would be an added visual element to the setting. A Forest Plan amendment would be needed to allow this use across Portage Lake.

The six recreational cabins in this alternative may become destination points, potentially increasing attraction and use along those segments (Primrose Trail, Johnson Pass, Turnagain Pass, and Twentymile area). Increased user intensity in these areas may also increase the potential for user conflicts.

Other features of this alternative include a footbridge at Moose Pass to provide access to the INHT, reconstruction of the Grant Creek Trail, and construction of a midpoint access trail from the Seward Highway to the upper and lower routes on the east side of Turnagain Pass. The improvements to Grant Creek Trail would make access to Grant Lake easier, potentially increasing use of this lake, and displacing current users. The midpoint access trail in Turnagain Pass would provide the opportunity to use the high and low routes in shorter segments and would allow easier access to extensive alpine terrain for winter nonmotorized sports enthusiasts.

Hunters establishing bear bait stations near Turnagain arm would be displaced from current station sites, since sites need to be at least ¼ mile from any trail locations.

Physical impacts would include 28 acres of ground disturbance relative to tread and 73 acres in cleared vegetation.

Cumulative Effects

For all alternatives, most of the other projects proposed in the area in the foreseeable future would add opportunities for people to experience developed recreation sites and use the services of outfitter guides. Conversely, the opportunities for solitude and quiet would diminish, or would require more effort to obtain them.

Projects that include removal of dead spruce trees would change the appearance of the forest from standing dead and fallen-over trees to more open forested areas in the short term and may speed up return to a mature forest appearance. This change may cause some current users to be displaced to areas that do not have timber removal activities. Removal of dead spruce would help to reduce trail maintenance costs where the activity is adjacent to a trail, by removing trees that would eventually fall across the trail and need to be removed to keep the trail useable.

Cultural Resources

Existing Condition

The entire Iditarod Trail is a system of over 2,000 miles of trail corridors and hundreds of associated properties that begin in Seward and were developed in response to gold rush era needs. The INHT epitomizes the gold rush theme in Alaskan history and was critically important in the development of gold mining and American settlement in west-central Alaska. The INHT is one of the most prominent trail systems specifically associated with gold mining in the history of the United States. A more thorough description of the history can be found in the project record.

Numerous heritage sites have been inventoried in and near the INHT project area. A database of existing cultural resource sites shows that, as of January 2003, a total of 470 known archaeological sites occur along or near the proposed trail routes. Of these, 290 sites need to be evaluated, and 110 need current site inventories for on-the-ground verification or boundary determination. Of the 470 sites, 126 are Level 1 sites, 146 are Level 2 sites, and 198 are Level 3 sites. These sites include but are not limited to historic camps, roads, trails, mining sites, railroad, and building remains. The existing trail runs through two sites, SEW-1029 Linblad Cabin on Winner Creek and ANC-271 Monarch Mine. A few sections of the proposed trail are actual segments of the historic trail. Although all sections of the proposed trail alignment have been culturally surveyed, undiscovered subsurface sites may exist. Newly discovered sites will be handled as outlined in the Mitigation section, above.

Effects

Alternative 1

Alternative 1 would have little or no direct or indirect effects on heritage resources. However, without the restoration work proposed in the action alternatives, the heritage resources would continue to deteriorate. In addition, site protection proposed in the action

alternatives would not be implemented, allowing the continuation of artifact looting and destruction of sites through unauthorized use (eg. fire and vandalism).

All Action Alternatives

During trail construction activities, all known sites within the project area would be avoided. If any potential archaeological sites (either historic or prehistoric) are discovered during trail building activities, all trail building activities in that location will cease. The project archaeologist should be notified to assess the site and potential impacts. Work in that area may resume after the archaeologist has determined that the site would not be harmed by further work. In addition, monitoring by trained heritage personnel during ground disturbing activities would take place where warranted.

Level 1 Sites: For the Level 1 sites described in the alternatives, some potential adverse effects may include looting, vandalism, and accidental fire, usually associated with increased public use. However, these adverse effects would be mitigated through interpretation, increased policing, protection, stabilization, and restoration. Specific effects to each site are documented in the specialist report.

Level 2 Sites: Similar effects would occur at Level 2 sites. While some of the effects may be adverse, usually associated with increased public use and the potential for looting, vandalism and accidental fire, these effects would be mitigated through interpretation, increased policing and stabilization and restoration. Overall, this project would result in positive effects on associated heritage resources.

Level 3 Sites: The implementation of any action alternative is expected to have little to no adverse effect to Level 3 sites associated with this project. Interpretation and site protection, however, would have significant positive effects to the resources by increasing public awareness and affording additional site protection that does not now exist. As a result, this project is expected to have no adverse effect to the associated Level 3 sites.

Cumulative Effects: Cumulatively, further recreation developments may increase recreation use, which may have the potential for future adverse effects, such as increased vandalism and looting of artifacts. Mitigation will be designed to protect sites and educate the public. However, increased funding levels would provide for additional protective measures, increased recreational sites would disburse users, and educational programs may offset adverse effects and have a cumulative positive impact on cultural resources.

Hydrology and Soils

Existing Condition

Climatic, topographic, and hydrologic conditions vary greatly along the proposed trail. These existing conditions are important for determining trail and bridge locations, and impacts of and on the trail.

Climate is influenced by large low-pressure systems from Prince William Sound. Precipitation averages over 60 inches per year in the Seward area and at the head of Turnagain Arm, and increases dramatically toward the east and with elevation. Snowfall is highest on Turnagain and Winner Creek Passes. With an average May 1 snowpack depth of 104 inches at Mt. Alyeska, the nearby Winner Creek Pass area retains large snowpacks well into July in most years.

The proposed alternatives cross many major avalanche paths, with potential trail maintenance and safety concerns. Particular areas of concern are between Snow River and Ptarmigan Creek, along Johnson and Turnagain Passes, along the west side of Twentymile Valley, over Winner Creek Pass, and along the Crow Creek Road north of Girdwood. The proposed route from Twentymile River over Winner Creek Pass crosses the largest concentration of avalanche paths. Although this route would not to be managed for winter use, many of the snow deposits last well into the summer.

The proposed alternatives include numerous major trail bridges, including crossings over dynamic streams. The proposed bridges over Center, Granite, and Lyon Creeks may be somewhat susceptible to failure because these channels have the potential to migrate within the floodplain. Hydrologists will provide input on a site-by-site basis to minimize bridge and trail impacts.

Wetlands are present in the Twentymile River, Turnagain Pass, Trail Lakes, and Mile-12 Hill areas. Where feasible, wetlands should be avoided. Wet and muddy conditions from spring flow will persist where the trail crosses the bases of steep, high valley sides, as in Twentymile Valley. The proposed trail encounters floodplains at Twentymile River, Granite Creek, Trail Creek, and the area between Bear Lake and Seward. Trails built in these areas may be continually scoured and damaged by floods.

Streamflows fluctuate dramatically, with high flows occurring from mid-June to August, and in the fall during heavy rainstorms. Aside from the high sediment loads from glacial sources, water quality in streams along the proposed trail route is within acceptable ranges, as most streams drain relatively pristine areas.

Effects

Alternative 1

This Alternative would have no detrimental effects on water resources above those resulting from current use of the area. However, this alternative would not benefit from improved conditions resulting from trail reconstruction and maintenance on existing trails, which would decrease surface erosion and sedimentation rates on damaged trails.

All Action Alternatives

Potential effects of implementing any of the action alternatives may include the following. Foot traffic may damage stream banks from soil compaction and physical erosion, leading to loss of riparian vegetation and increased bank erosion rates. Meandering streams are highly susceptible to bank erosion. However, such damage to banks would be minimal because the proposed trail only has limited contact with streams.

Some trails built in floodplains, such as along Twentymile River, Granite Creek, Bench Creek, and Center Creek, may have the potential to decrease floodplain effectiveness and cause resource damage. However, with the application of BMPs, properly built trails would only have limited effects on floodplain integrity.

The trail may result in slight increases in sediment loads associated with stream bank and trail erosion, although such increases would be minimal with the application of BMPs. Spilled oil and gas from winter snowmachine use can potentially cause slight degradation of

chemical water quality. Fecal coliform levels may also increase slightly in water bodies near camping areas.

Alternative 4 has the greatest number of trail miles and may have increased potential for trail erosion and sedimentation in streams. The effect of this increase in trail length would be minimal, as long as trails and bridges are designed correctly and with the application of BMPs. Potentially increased snowmachine use during periods of low snow cover at low elevations may lead to more severe surface erosion and sedimentation.

As stated above, the potential negative impacts to hydrologic resources would be minimal. In addition, the implementation of any action alternative may actually improve conditions on some of the existing trails through trail construction and maintenance, decreasing surface erosion and sedimentation rates on damaged trails. Therefore, the overall effect to hydrologic resources would be minimal for all action alternatives. The application of BMPs would further minimize any negative impacts.

Cumulative Effects: Cumulatively, as recreational development and use increase, potential negative impacts may also increase. However, these impacts would continue to be minimal as developments and use are in fairly concentrated areas, leaving large areas of the watersheds in a pristine condition.

Wildlife

Existing Condition

Nearly 200 species of wildlife are found on the Kenai Peninsula and may be present within or adjacent to the proposed trail corridor. Of those species, only those listed in the Forest Plan as TES (threatened, endangered or sensitive), MIS (management indicator species), or SSI (species of special interest) are discussed. The definitions of these groups are in the Forest Plan.

Effects

All Alternatives

TES: A biological evaluation has been completed for this project. The proposed trail does not run through any existing or potential habitat for threatened, endangered, sensitive or proposed species on National Forest lands. Most of these species are marine mammals or their range is outside of the project area. Therefore, no direct, indirect or cumulative effects are expected from any of the alternatives.

The **Trumpeter swan** is the only sensitive species that occurs adjacent to the project. The trail runs at least 0.5 mile from any known or potential nesting habitat on National Forest land. No direct, indirect or cumulative effects are expected from any of the alternatives.

Ospreys are also a sensitive species that migrate through the area and sightings are occasionally reported. However, ospreys are uncommon to rare throughout Alaska, localized in the vicinity of lakes, large rivers, and coastal bays. There are no reports of ospreys nesting along the trail route nor are there any recorded nest locations on either the Seward or Glacier Ranger Districts. Therefore, no direct, indirect or cumulative effects are expected from any of the alternatives on this species.

MIS: Management indicator species are moose, mountain goat, and brown bear.

Moose habitat exists throughout the majority of the proposed trail corridor and moose sign was noted in almost all areas during surveys. Direct and indirect effects of the action alternatives include disturbance by motorized and nonmotorized recreation and increased access by hunters. The greatest impacts to moose may occur on segments of trail managed for snowmachine use. Alternative 4 has slightly more potential to affect moose based on the slightly greater miles of trail through winter habitat managed for snowmachines, but all alternatives should be very similar in effect. Although the trail has the potential to disturb individual moose or increase hunter access, there is no data to suggest that this could potentially impact population numbers or viability. In summary, all alternatives may affect individual moose, but should not have substantial effects on moose or impact populations or viability. Mitigation can reduce impacts to individuals (see mitigation section).

The trail corridor for each alternative passes near identified habitats important to **mountain goats** in the Winner Creek, Turnagain Pass, and Johnson Pass areas. Goat habitat is typically located high above the trail corridor in the alpine and on steep-rugged slopes. Goats have been sighted or sign has been noted at lower elevations, which are used by goats for travel between primary habitat areas or in winter foraging in old growth hemlock stands. Some of these travel or foraging areas are within the trail corridor. Direct impacts from trail construction/reconstruction or user impacts on goats or their habitat are considered to be minimal for all alternatives. There is little difference in potential effects between alternatives. The trail or use of the trail should not impede occasional travel by goats. None of the alternative should have direct, indirect or cumulative effects on this species.

The population of **brown bears** on the Kenai Peninsula is unknown, but one estimate has been placed at 140-280 individuals. Brown bears move extensively throughout the Kenai Peninsula using the resources of the ecosystem (mountain-side den sites, alpine foraging areas in the spring, riparian areas and fish streams in the summer, and upland berry patches in the fall). Results of a habitat selection model for brown bears on the Kenai Peninsula show that the proposed trail corridor intersects few areas of potentially high or moderate use by bears.

Increased recreational activities on portions of the proposed trail may cause temporary disturbance or more permanent displacement from an area. The majority of the proposed alternatives follow existing trails or parallel existing roads, trails, and highways and should have minimal additional impact on Kenai Peninsula brown bears. Trails requiring a Forest Plan amendment in Alternative 3 may have increased den disturbance due to additional access for winter motorized use.

New trails proposed in areas without any previous trails, such as the pass between Winner Creek and Twentymile River, may present concerns for human-bear interactions. The proposed route through Twentymile may be in a bear travel corridor, but not necessarily in a brown bear concentration area. If this is a black or brown bear high use area, design features to enhance visibility should be incorporated into the final trail layout to reduce human-bear interactions. In addition, informational and interpretive signs can help educate recreational users on travel through bear country.

A review of brown bears killed in defense of life and property (DLP) from 1961-1999 shows that the number of brown bears killed correlates with increased human population on the Kenai Peninsula. Most (81%) of brown bears killed in DLP were by hunters or at

residences. Although trails in general are not large contributors to DLPs, they provide access to hunters, which may increase DLP encounters. However, this increase is not likely to have a substantial effect on this species. The proposed trails pass through huge undeveloped areas and are not considered a significant threat to bear populations as a result of trail user disturbance. In summary, all alternatives may affect individual bears, but should not have substantial effects on bears or impact populations or viability.

SSI: Species of special interest are the gray wolf, lynx, wolverine, river otter, marbled murrelet, Townsend's warbler, bald eagle, northern goshawk, and osprey.

Gray wolves, lynx, wolverine, and river otter may be harvested by hunters or trappers throughout the trail corridor. Any newly constructed trail section may provide increased access allowing for increased hunter/trapper take of these species. The potential for increased harvest should not have substantial effect on the populations of these species. In addition to direct harvest, the trail users may disturb individual animals. Wolves, lynx and wolverine, in particular, have been found to be sensitive to human disturbance. The proposed trails pass through huge undeveloped areas and are therefore not considered as a major threat to populations as a result of user disturbance. None of the alternative should have direct, indirect or cumulative effects on these species.

Marbled murrelet, Townsend's warbler, northern goshawk, and bald eagle are all species that use mature or old growth habitat for nesting or roosting. The Marbled murrelet and Townsend's warbler prefer old growth conifer forests, bald eagles nest in old growth cottonwood, and northern goshawks in old growth spruce/hemlock. Some large trees may be removed during trail construction, which may affect some individual birds during the breeding season. All action alternatives could potentially affect habitat along 11 miles of trail, and 40 acres of mature forest habitat during trail construction. The spruce bark beetle may already have impacted many of these acres. In cases where known nests occur adjacent to the trail, recommended mitigation measures should reduce impacts to individual birds. Tree removal should be minimal and may impact individuals, but is not expected to impact populations of any of these species.

Migratory Birds

Migratory bird species of concern in Alaska were reviewed using the "Land bird Conservation Plan for Alaska Biogeographic Regions" and "Birds of Conservation Concern in 2002." Most species listed are considered common or abundant on the forest. Overall, the amount of habitat that would be affected is minimal compared to what is available. The project may impact some individual migratory birds by removing nesting substrate during trail construction, but is not expected to impact populations or species viability.

Summary of Direct, Indirect, and Cumulative Effects: Overall, direct effects to habitat from trail construction and facility construction activities are minimal in all alternatives. Indirect effects from recreation are not expected to be substantial. Cumulative effects are additional habitat loss, additional disturbance to wildlife, and reduction of habitat quality, as recreation and development increases across the forest over time. Cumulative effects also include increasing awareness of wildlife and habitat needs, as watch-able wildlife, interpretation and education increases with new opportunities over time

All action alternatives should have limited effects on individuals of any species and no effect on populations.

Fisheries

Existing Condition

The proposed trail passes by many lakes and crosses many streams. Inhabiting portions of these waters are all five species of Pacific salmon: Pink salmon; Chum salmon; Coho salmon; Chinook salmon; and Sockeye salmon. In addition to salmon there are three notable native species present: Eulachon; Dolly Varden char; and Rainbow trout. There are also three species that have been stocked in local lakes to utilize available habitat and provide recreational fishing opportunities: Arctic char; Rainbow trout; and Arctic grayling.

The productive areas for fish habitat on the Kenai Peninsula are dominated by floodplains and moderate gradient streams in the valley bottoms. These channels receive moderate to high spawning use by all anadromous species. Coho salmon and Dolly Varden char use the available rearing areas of these channels extensively. Much of the better rearing habitat, particularly for coho salmon, is associated with large woody debris accumulations, beaver dams, and off-channel sloughs. Sockeye production is associated with large lake systems found within the Kenai watershed, but they frequently use the floodplain and mixed control channels for spawning. Pink and chum salmon young and eulachon larvae quickly move out of the freshwater to saltwater where they rear.

Effects

All Alternatives

Fisheries resources have been surveyed and monitored for decades on the Kenai Peninsula. Activities of this nature generally do not create any significant concerns for fish or their habitats. Past field surveys did not establish any major fisheries concerns with the INHT and public scoping did not generate any key issues.

Potential concerns are stream crossings and the potential for sediment to enter the stream as a result of trail construction, operations, and maintenance. All action alternatives include a large number (up to 79) of bridge crossings, or low water fords. However, none of the major crossings call for culverts, which are more problematic in regard to fish passage. Neither low water fords nor well-constructed bridges pose major concerns to fisheries. Fisheries biologists and hydrologists will work with engineers to develop effective stream crossings to avoid impacts to the resource.

Stream sedimentation is another potential concern. Past monitoring has shown that trails generally do not produce large amounts of sediments to affect fisheries habitat in any measurable way. None of the action alternatives should cause sedimentation problems if BMPs (see mitigation section) are followed.

Trail construction planners will follow Forest Plan standards and guidelines, and the USDA Forest Service Soil and Water Conservation Handbook of Best Management Practices. The implementation of these various conservation measures would minimize potential adverse effects on fish habitat, thus protecting and conserving habitat to support sustainable fisheries and their contributions to healthy ecosystems. Based on past surveys, results of monitoring,

and by implementing conservation measures, all alternatives present a low risk to adversely affect fisheries resources.

Vegetation

Existing Condition

The area within a 500-meter buffer of the proposed route features a wide diversity of plant species and vegetation types. A total of 255 vascular plant species and 99 vegetation types were observed within the project area and vicinity. This represents about 45% of the species and 35% of the vegetation types documented for the entire Chugach National Forest. Over half of the trail corridor is located in forested vegetation. The remainder of the trail corridor occupies shrubby, herbaceous and nonvegetated areas.

Effects

All Alternatives

Non-Native Plants: To date, large populations of non-native plants have not been observed outside of areas directly affected by human-caused disturbance within the Kenai Mountain and Seward area. However, factors that potentially affect non-native plant populations are increasing. For example, human uses (including use of pack animals, mountain biking, and other means of mechanical recreation) are increasing. In addition, plant communities are changing due to such factors as spruce bark beetle, highway construction, and revegetation projects. All action alternatives have the potential to increase introduction and spread of non-native plants; however, mitigation measures and design features would help minimize impacts due to non-native plants.

Threatened, Endangered, Sensitive, and Rare Plants: Based on the biological evaluation prepared for this project, no threatened, endangered, or sensitive plants were located in areas surveyed for this proposal. There are previously documented sightings of the sensitive plant *Papaver alboroeusm* in the vicinity of the project area. These sightings are far enough from the proposed trail route that they would not likely be affected by any of the alternatives. None of the alternatives are expected to adversely affect any sensitive plants in the proposed trail corridor. However, the Winner Creek/Twentymile segment has not been adequately surveyed for sensitive plants since the plants could no longer be positively identified at the time of the survey. This segment will be resurveyed and a biological evaluation completed prior to any ground disturbing activities.

If any sensitive plants are encountered at any point in time prior to or during implementation of this project, protect the population and avoid any disturbance in the area containing the population. The district or forest botanist/ecologist will be notified to evaluate the population and recommend avoidance or mitigation measures.

Minerals and Geology

Existing Condition

A long history of mining placer and lode gold, as well as mineral materials, is associated with the INHT corridor and vicinity. The specialist report in the project file contains detailed information on the geology and minerals resources in the project area. Historically,

2,000 to 2,500 federal mining claims existed on the Chugach National Forest; nearly all of these were on the Kenai Peninsula. After a 1993 Appropriations Act for the Department of the Interior that required a payment of $100 per claim (in lieu of $100 worth of assessment work) the number of mining claims dropped. Currently there are approximately 450 mining claims on the Kenai Peninsula and Girdwood area. Of these, a total of 220 federal mining claims occur near the proposed trail. The laws and regulations that direct the rights and responsibilities of mining claimants and the government are described in the specialist report in the project file.

Effects

Alternative 1

This alternative (No Action) would have no effect on ongoing minerals operations, potential minerals operations, mining claimant rights, or mining claims. Under this alternative the status quo would likely continue except that changes in gold prices or access improvement caused by other actions may occur.

All Action Alternatives

Increased Public Use: With the implementation of any action alternative, public use may increase. Potential effects of increased public use may include the following. Vandalism and theft of mining equipment, supplies and camps may increase with more people using the area. However, having more people in the area could also increase the chances of these illegal activities being spotted and reported to law enforcement. Recreational gold panning within a mining claim may also increase. Mining claimants have an exclusive right to extract minerals on their mining claims; however, many claimants do not have a problem with recreational gold panners since the amount of material they remove is very small. Increasing the number of people using an area may result in more mining claims being located. Logical areas would be places with a history of gold production and other high potential areas that are identified in the project record. Finally, increasing public use also increase potential exposure to abandoned mine hazards. There are a number of old lode mine workings in the vicinity of the INHT that are in various stages of deterioration. Location of old mine sites is contained in the project record. If any additional sites are discovered, the Forest Certified Mineral Examiner should be notified so the site can be investigated for the nature and severity of the hazards.

Trail Construction and Reconstruction: The trail itself may be considered a defacto withdrawal, which means that the area of the trail itself may not be mined. This is only a very minor effect since the area actually occupied by the trail is narrow and small. However, if a mining claim exists prior to trail construction, then the mining claim may have valid existing rights. The claimant would have the right to mine the actual trail, but would have to relocate it during the process, which would be an additional burden on the claimant. Construction and reconstruction activities would require gravel from local sources. However, the amount required would not impact these sources since there are considerable reserves in the area. The implementation of any action alternative would also improve access to the backcountry, which may result in better access for mining claim location, prospecting, and mining operations. Widened trails may better accommodate ATVs and ATV use may be approved for mining related purposes.

Mining Claimant Rights: The implementation of any action alternative would not change or eliminate any of the rights associated with ownership of mining claims. A discussion of these rights can be found in the project record.

Effects Specific to Alternative 3: The increased snowmachine use under this alternative could increase the potential for vandalism and theft. Snowmachine use during periods of low snow cover may also damage trails, affecting access to mining claims/operations. The Grant Lake area has old mine workings. Reconstruction of the Grant Creel trail may expose more people to risks associated with abandoned mine workings.

Effects Specific to Alternative 4: This alternative would construct and reconstruct the most miles of trail and new cabins. Nevertheless, the effects on mineral resources would be relatively small and would be similar to those discussed under Alternative 3.

Cumulative Effects: In considering effects of past, present, and reasonably foreseeable future actions relative to minerals resources, the Seward District proposes to continue the issuance of a special use permit to allow guided ATV trips on Crown Point and Falls Creek Roads, which may have the potential to conflict with minerals use. Both roads are old mining roads that lead to old lode mines, all of which have serious hazards. In addition, there has been continued interest in prospecting and sampling the area and the workings. No mining is currently occurring in the area but a number of mining claims cover the area and claimants are currently using ATVs to access their claims.

Lands

Existing Condition

The majority of the land ownership in the project is National Forest lands. The Chugach National Forest boundary was established by several Proclamations by the President of the United States, mostly in the early 1900s. The majority of other lands are state lands. The remaining areas are owned by the local government of the Kenai Peninsula Borough and the Municipality of Anchorage; the Alaska Railroad; and some private lands.

Currently, legal trail easements for public use exist on portions of State land, and some private lands. The remaining areas would require legal trail easements.

Effects

All Alternatives

The majority of the proposed trails cross National Forest lands. Table 5 presents the estimated miles of trail across lands other than National Forest.

Table 5. Other Ownership

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
State Lands	0*	50.4	46.5	52.0
Kenai Peninsula Borough Lands	0	1.3	1.3	1.3
Municipality of Anchorage Lands or Interests	0	4.9	4.9	4.9
Chugach Alaska Corp. Lands	0	0.9	0.9	0.9
Private Lands	0	2.5	2.5	2.5
Alaska Railroad Lands	0	0.3	0.3	0.4

*Miles are "0" since Alt. 1 (no action) would not construct, manage or maintain the Iditarod trail routes.

Public use trails managed by the Forest Service on National Forest lands do not require easements. Public use trails across other ownership to access National Forest land and trails do require trail easements. Some proposed trail segments already have easements for public use trails that were acquired by the Forest Service or that were reserved to the United States when the land left federal ownership. Table 6 displays the miles of existing public use easements and miles where trail easements do not currently exist.

Table 6. Public Use Easements

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Existing Trail Easements Across State Lands	29.9	29.9	25.3	29.9
Needed Trail Easements Across State Lands	0	20.5	21.2	22.1
Existing Trail Easements Across Muni./Borough Land	4.9	4.9	4.9	4.9
Needed Trail Easements Across Muni/Borough Land	0	1.3	1.3	1.3
Existing Easement Across Chugach Alaska Corp. Land	0.9	0.9	0.9	0.9
Needed Easement Across Chugach Alaska Corp.	0	0	0	0
Existing Easements Across Private Lands	2.5	2.5	2.5	2.5
Needed Easements Across Private Lands	0	0	0	0
Needed Agreements on Crossings Across Alaska Railroad (# of crossings) *	0	2	2	3

*Does not reflect all railroad crossings.

Cumulative Effects: Cumulatively for all alternatives, some landownership in the project area may change over time through land exchanges, sales, donations or other means of conveyance. Some areas within the project area are currently State land managed by the Department of Natural Resources that have been selected by the Kenai Peninsula Borough under State laws for Borough entitlements. These areas will be conveyed to the Borough by a State of Alaska Patent. Other areas along the corridor are currently National Forest, but have been selected by the State under the authority of the Alaska Statehood Act, may become State lands in the future. The current State of Alaska, Department of Natural Resources, Division of Mining, Land, & Water, Resource Assessment & Development Section, "Kenai Area Land Plan" completed in 2000, provides provisions to convey the necessary right-of-ways to the Forest for the INHT. Even though landownership may change along the proposed routes, any existing and planned trail routes can be reserved for public use through land use rights that run with the land title.

CONSISTENCY

National Forest Management Act - The Action Alternatives comply with the Forest Plan. If an amendment were required, agency procedures would be followed. The Forest Plan complies with all resource integration and management requirements of 36 CFR 219 (219.14 through 219.27).

Endangered Species Act - Biological evaluations were completed for threatened, endangered, proposed, and sensitive plant and animal species. No threatened and endangered plant or animal species would be affected by any of the action alternatives.

Bald Eagle Protection Act - Management activities within bald eagle habitat will be in accordance to a Memorandum of Understanding between the Forest Service and the U.S. Fish and Wildlife Service.

ANILCA Section 810, Subsistence Evaluation and Finding - The effects of the alternatives have been evaluated to determine potential effects on subsistence opportunities and resources. There is no documented or reported subsistence use that would be restricted by any of the action alternatives. For this reason, none of the alternatives would result in a significant possibility of a significant restriction of subsistence use of wildlife, fish, or other foods.

Coastal Zone Management Act of 1972, as amended - The alternatives would be consistent with the State of Alaska Coastal Zone Management Act to the maximum extent practicable.

Magnuson-Stevens Fishery Conservation and Management Act of 1976, as amended - The Magnuson-Stevens Fishery Conservation Act (the Act) requires that all federal agencies consult with the National Marine Fisheries Service (NMFS) when any project "may adversely affect" essential fish habitat (EFH). The Act also requires that agencies with existing consultation processes contact NMFS to discuss how the existing processes can be used to satisfy the EFH consultation requirements (50 CFR 600.920(e)(3)). None of the alternatives will cause any action that may adversely affect EFH as defined by this Act.

National Historic Preservation Act of 1966 – Section 106 of the National Historic Preservation Act requires that all federal undertakings follow the regulations found at 36 CFR 800 to identify and protect cultural resources that are within project areas and which may be effected by projects. The Chugach National Forest will follow the procedures in the Programmatic Agreement among the Chugach National Forest, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer regarding management of the INHT and its associated historic properties.

Executive Order 11988 - Wetlands - Wetlands occur in the project area. Measures, such as the implementation of Best Management Practices, will be taken to minimize the impact to wetlands in accordance with E.O. 11988.

Executive Order 11990 - Floodplains - Floodplains occur in the project area. Measures, such as the implementation of Best Management Practices, will be taken to minimize the impact to floodplains in accordance with E.O. 11990.

Executive Order 12898 - Environmental Justice - Implementation of this project is not anticipated to cause disproportionate adverse human health or environmental effects to minority or low-income populations.

Executive Order 12962 - Recreational Fisheries - No major adverse effects to freshwater or marine resources would occur with implementation of this project.

Clean Water Act - The project design is in accordance with Forest Plan standards and guidelines, Best Management Practices, and applicable Forest Service manual and handbook direction. The project activities are expected to meet all applicable State of Alaska water quality standards.

Clean Air Act - Emissions anticipated from the implementation of the Action Alternative would be of short duration and would not be expected to exceed State of Alaska ambient air quality standards (18 AAC 50).

Executive Order 13112 - Invasive Species - Invasive species populations have the potential to spread in the project area. Measures, such as cleaning equipment prior to entering NFS lands and use of weed-free materials in trail construction; would be taken to minimize the spread of invasive species in accordance with E.O. 13112.

AGENCIES AND PERSONS CONSULTED

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

ID TEAM MEMBERS:

Core IDT	
Dan Golden	Project Manager
Jaime Schmidt	IDT Leader
Alison Rein	Recreation Planner
Pat O'Leary	Recreation Planner
Tony Largaespada	Archaeologist
Mary Ann Benoit	Wildlife Biologist
Cliff Fox	Fisheries and Wildlife Biologist
Mike Shields	Engineering Consultant
Andy Devolder	GIS Specialist
Betty Charnon	Writer/Editor
Extended IDT	
Bill MacFarlane	Hydrologist
Andy Schmidt	Lands Specialist
Carol Huber	Geologist
Mike Goldstein	Wildlife Biologist
Lance Valentine	Engineer
Eric Johansen	Fisheries Biologist
Elizabeth Bella	Vegetation Management
Rob Develice	Plant Ecologist
Dean Davidson	Soils Scientist
Pat Reed	Social Scientist

FEDERAL, STATE, AND LOCAL AGENCIES AND INDIVIDUALS:

Name	Title	Agency
Ron Arnold	Director	Iditarod National Millennium Trail
Dale Bagley	Mayor	Kenai Peninsula Borough (KPB)
Jim Bennett	Partner	Glacier Valley Development Corp.
Judy Bittner	State Historian, SHPO	State of Alaska
Edgar Blachford	Mayor	City of Seward
Tom Brigham	Director, Statewide Planning	Department of Transportation and Public Facilities, Division of Statewide Planning
Thomas E. Brooks	Chief Engineer	Alaska Railroad
Al Burton	Right of Way Agent	Department of Transportation and Public Facilities
Bruce Bustamante	President & CEO	Anchorage Convention & Visitor's Bureau
Bruce E. Carr	Director, Strategic Planning	Alaska Railroad
Art Eash	Land Management Officer	Municipality of Anchorage, Heritage Land Bank
Merv Erickson	Lead Engineer, Bridge Group	USDA FS, Portland, Oregon
Steve Farley	Research Biologist	Alaska Department of Fish and Game, Anchorage, Alaska
Dan Golden	Environmental Coordinator	Department of Transportation and Public Facilities
Steve Hennig	Landscape Architect	USDA Forest Service, Chugach National Forest
Ann Herschleb	Co-chair	Girdwood Board of Supervisors
Kieman Holliday	Engineer/Attorney	Santa Fe National Forest
Tim Hudson	Chief, Engineering, Design and Maintenance	National Park Service Alaska Region
Tucker Hurn	Right of Way Agent	Department of Transportation and Public Facilities
Carl Kassel	Director, Parks and Recreation	Fairbanks – North Star Borough
Kevin Keeler	Outdoor Recreation Planner	National Park Service, Alaska Support Office, River, Trails & Conservation Assistance
Cliff Larson	Natural Resource Manager – Easements	Alaska Department of Natural Resources, Division of Mining, Land, and Water

Robert Laurie	State Bicycle and Pedestrian Coordinator	Department of Transportation and Public Facilities, Division of Statewide Planning
Al Le Page	Executive Director	National Coast Trail Assoc. Portland, OR
Loren Leman	Lt. Governor	State of Alaska
Merdith Lockwood	Enterprise Team, Trails Unlimited Training, Consulting and Construction	USDA Forest Service Arcadia, CA
Susan Marvin	Alaska Region Heritage Program Manager	USDA Forest Service Region 10, Alaska Region
Sam Means	Supervisor, Right of Way	Alaska Department of Natural Resources, Division of Mining, Land, and Water
Thomasjohn Miller	Board Member	INHT INC
Mark Morones	Communications Director	Alaska Travel Industry
Karen Morrisey	Manager Real Estate	Alaska Railroad
Andy Morrison	Guide	Alaska Snow Safaris
Laurie Mulcahy	Environmental Coordinator	Department of Transportation and Public Facilities
Tom Nelson	Planner	Municipality of Anchorage
Teresa Paquet	Special Uses Administrator	Glacier Ranger District, Chugach National Forest
Chris Patterson	Right of Way Agent	Alaska Department of Natural Resources
Gary Paull	Wilderness & Trails Coordinator	Mt. Baker-Snoqualmie National Forest, WA
Ron Peck	President/COO	Alaska Travel Industry
Lee Poleske	Historian	INHT, Inc. & Seward Iditarod Trail Blazers
Leo Rasmussen	President.	INHT, Inc
Donna Redding	District Archaeologist	Bureau of Land Management
Jim Renkert	Natural Resource Officer Marine Recreation and Trails	Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation
Eph Roberts	Groomer	Alyeska Ski Resort
Carol Jo Sanner	Permits Officer Preliminary Design & Environmental	Department of Transportation and Public Facilities, Central Region,
Duane Schultde	Committee Chair	Girdwood Trails Committee, Girdwood Board of Supervisors
Dan Seavey	President Board Member	Seward Iditarod Trail Blazers INHT, Inc.

Bill Shuster	Wildlife Biologist	USDA Forest Service, Chugach National Forest
Steve Silverstein	Vice President Markets, Sales and Services	Alaska Railroad
Kathleen Simon	Trails Coordinator	Kenai Peninsula Borough
Sandra Singer	Right of Way Agent	Alaska Department of Natural Resources
Carl Skustad	Recreation Technician	Glacier Ranger District, Chugach National Forest
Dennis Smith	Trail Construction Specialists	Northwest Woodland Services, Boring, OR
Bonny Sosa	Manager of Community Relations	Anchorage Convention & Visitor's Bureau
Mary Stensvold	Regional Botanist	USDA Forest Service, Region 10, Sitka, Alaska
Tim Stone	Manager	Pacific Coast National Scenic Trail
Lowell Suring	Wildlife Ecologist	USDA Forest Service, Forest Sciences Laboratory, Boise, ID
Aneta Synan	TRAAK Coordinator	Department of Transportation and Public Facilities, Statewide Planning
Bruce Talbot	Natural Resource Manager	Alaska Department of Natural Resources, Division of Mining, Land, and Water
Mike Tetreau	Chairman, Trails Committee	Kenai Peninsula Borough
James (Pat) Tilton	Land Management Officer	Municipality of Anchorage
Jennifer Wellington	Landscape Architect	Santa Fe National Forest
George Wuerch	Mayor	City of Anchorage
Linda Finn Yarborough	Forest Archeologist	USDA Forest Service Chugach National Forest
Rex Young	Kenai Peninsula Area Planner	Department of Transportation and Public Facilities, Central Region
Mike Zaidlicz	INHT Trail Manager	Bureau of Land Management

APPENDIX A: ALTERNATIVE MAPS